Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

KANT'S ANALOGIES OF EXPERIENCE.

KANT'S Analogies of Experience are, we may remember, the explicit statements of the general principles of substantiality, causality, and reciprocity. Their general location in the *Critique of Pure Reason* may be briefly indicated as follows: After the Introduction comes the Æsthetic, with its doctrines of space and time, then the 'deduction' of the categories from the table of judgments, the doctrine of the schematism, and then the Analytic of Principles. This includes the famous discussion of the 'highest principles' of all analytic and synthetic judgments, and, secondly, the table and formal discussion of the principles. After this latter, we find the section on the "Ground of Distinction of all Subjects into Phenomena and Noumena," and the Appendix, "On the Amphiboly of Reflective Concepts." The principle of the Axioms of Intuition establishes the applicability of the concept of extensive magnitude to all phenomena, and the principle of the Anticipations of Perception establishes the applicability of the concept of intensive magnitude to the "real in phenomena." Then come the Analogies of Experience, followed by the Postulates of Empirical Thought in General, which deal with possibility, reality, and necessity. The historical and systematic importance of the Analogies is too obvious to require discussion.

I.

The Analogies are preceded by a general principle, which is given in *A*[1] as follows: "All phenomena, as far as their existence is concerned, are subject *a priori* to rules, determining their mutual relation in one and the same time"; while their principle is given in *B*: "Experience is possible only through the representation of a necessary connection of perceptions."[2] There is no great difference between these two formulæ, save that the first brings out the nerve of Kant's argument more clearly,—"determining their mutual relation in one and the same time,"—while the second emphasises Kant's historic opposition to Hume in the phrase "necessary connection."

---

[1] *A* = edition of 1781; *B* = edition of 1787. All translations of the *Critique* are taken from Müller.

[2] Müller, p. 144 and p. 772.

In *B* Kant inserts after the principle as given above a 'proof,' which may be considered first. Perceptions themselves are only related contingently; there is no necessity in their connection. "Experience, on the contrary, is a knowledge of objects by perceptions, in which therefore the relation in the existence of the manifold is to be represented, not as it is put together in time, but as it is in time objectively (*nicht wie es in der Zeit zusammengestellt wird, sondern wie es objectiv in der Zeit ist*)."[1] Now time itself cannot be perceived; consequently, "the determination of the existence of objects in time can take place only by their connection in time in general, that is, through concepts connecting them *a priori*. "Thus experience is only possible by an idea of necessary connection." Q. E. D. Kant's subsequent remarks, contained in both *A* and *B*, add little. One statement may be cited, however, for the sake of clarity. "The general principle of the three analogies depends on the necessary unity of apperception with reference to every possible empirical consciousness (perception) *at every time*, and, consequently, as that unity forms an *a priori* ground, on the synthetical unity of all phenomena, according to their relation in time."[2]

Thus for Kant we reach the objective world only through the intermediation of the three principles which he calls the Analogies of Experience. This doctrine need not be taken in a 'psychologistic' sense as implying that at one temporal stage of consciousness we live in a world of purely subjective sensations, and only come to apprehend an objective world at a later period. Thus the statement of Prichard, that Kant's argument really assumes the existence of a process "by which, starting with the successive apprehension of elements of the manifold in isolation, we come to apprehend them as temporally related,"[1] implies, like certain other of Prichard's remarks, the 'psychologistic' reading of Kant. While, no doubt, there are many phrases in Kant which imply such an interpretation, yet the fact must not be ignored that such writers as Edward Caird[2] and Hermann Cohen have plausibly argued that the 'real' Kant is Kant the logical analyst rather than Kant the psychologist. From the standpoint of logical analysis, Kant's doctrine does not concern any sort of temporal process, but asserts merely that our knowledge of objectivity *implies* or *presupposes* knowledge of the truth that the objective world is a world of 'necessary connections.'

---

[1] Müller, p. 772.

[2] Müller, p. 144.

Prichard affirms that the only way in which we can prove the principle of causality is by means of the 'dogmatic method' which Kant rejected. To attain insight into causality "we have only to reflect upon what we really mean by a 'physical event.' The vindication can also be expressed in the form that the very *thought* of a physical event presupposes the *thought* of it as an element in a necessary process of change—provided, however, that no distinction is implied between the nature of a thing and what we think its nature to be."[3] Now, the main thesis of the present paper is that Kant, in his 'proofs' of the Analogies of Experience, really used precisely this 'dogmatic method.' He really used it in the sense that the whole cogency and force of his arguments depend on it; if we take his arguments in the 'psychologistic sense' they completely break down. In fact, what Prichard calls the 'dogmatic method' *is* the 'critical method'—granted that we free the critical method of all traces of what may be called psychogenetic mythology. For Prichard's 'dogmatic method' proceeds by an *analysis of what we mean,* and Kant's philosophy, in so far as it is valid, comes to precisely this.

---

[1] Prichard, H. A., *Kant's Theory of Knowledge,* Oxford, 1909, p. 275. Prichard is explicitly speaking of the three Analogies rather than of their common 'principle.'

[2] *Cf., e.g.,* Caird's statement: "The fact that, in the first instance, Kant pays regard only to connexion in time, must be considered as a result of the lingering psychological view of the Deduction—as if its object were merely to explain the process whereby a succession of sensations or perceptions is turned into an experience of objects which, as such, are in space. Kant, however, more and more worked himself free of this idea, and substituted for it the true conception of a transcendental regress as, not an account of the genesis of an intelligible experience out of elements that existed *before* it, but an attempt to realize all that experience is, and to bring to light all the elements implied *in* it." *The Critical Philosophy of Immanuel Kant,* 2nd ed., Glasgow, 1909, Vol. I, p. 479.

[3] *Op. cit.,* p. 300.

But let us return to the general principle of the Analogies. Kant's general principle is, or at least appears to be, perfectly valid in its general import, and less open to criticism than the particular Analogies. Experience, that is, knowledge of an objective world, is possible only if we assume that this outer world is an orderly law-abiding whole. What this really amounts to is that the idea of objectivity, of which Kant's critical philosophy is only an analysis, implies that what is objective, in the sense of physical objectivity, conforms to law. In so far as Kant meant or suggested that we must know the three Analogies of Experience in order to 'arrange' things and events in time, and thus spoke as a psychologist, we shall see that his arguments, with regard to the three particular Analogies, are clearly fallacious. What is valid in and sustains the general principle is simply the thought of Leibniz that what distinguishes reality from the world of dreams is the order and coherence of the former. As Leibniz said in the *Nouveaux Essais:* ". . . the truth of sensible things consists merely in the connection (*liaison*) of phenomena . . . which distinguishes them from dreams. . . . I believe that the true Criterion with regard to objects of sense is the connection of phenomena, that is to say, the connection of what takes place in different places and times, and in the experience of different men, who are themselves phenomena the one to the other. . . . For the rest, it is also true that provided phenomena are connected, it does not matter whether one calls them dreams or not, since experience shows that we are not deceived in the measures we take with phenomena when they are connected according to the truths of reason."[1] Wolff, too, accepted this doctrine. "As now the same order is not found in dreams," he says, "where no reason can be shown by experience as to why things are arranged in this way and why their changes follow as they do upon each other, we clearly see that truth is distinguished from dreams by order."[1] Now, Kant's doctrine differs from that of Wolff merely by the fact that Wolff sought to define this order in terms of the law of non-contradiction, whereas Kant recognized the necessity of 'synthetic' principles. In the *Prolegomena* Kant says: "But the difference between truth and dreaming is not ascertained by the nature of the representations, which are referred to objects (for they are the same in both cases), but by their connection according to those rules, which determine the coherence of the representation in the concept of an object, and by ascertaining whether they can subsist together in experience or not."[2] As Kant says in defense of the Second Analogy: "If it were different, if the antecedent phenomenon were there, and the event did not follow on it necessarily, it would become to me a mere play of my subjective imaginations, or if I thought it to be objective, I should call it a dream."[3] This all comes to much the same as is more poetically expressed by Schopenhauer: "Life and dreams are leaves of the same book. The systematic reading of this book is real life, but when the reading hours (that is, the day) are over, we often continue idly to turn over the leaves, and read a page here and there without method or connection. Often one we have read before, sometimes one that is new to us, but always in the same book. Such an isolated page is indeed out of connection with the systematic study of the book, but it does not seem so very different when we remember that the whole continuous perusal begins and ends just as abruptly, and may therefore be regarded as merely a larger single page."[4] No doubt this doctrine, especially as expressed by Schopenhauer, suggests that false subjectivism, which Kant himself sought to 'refute,' but from a purely logical standpoint it is indubitable that one of the *criteria* of physical reality is the coherence of phenomena in an ordered system. What fails to fit into this system we call 'unreal,' although we may be aware that what is unreal in one connection must be real in some other. What this amounts to is simply that Kant explains the idea of objectivity *to mean* the world in so far as the world is governed by universal laws.

---

[1] *N. E.* IV, 2, 14.

---

[1] Wolff, *Vernünftige Gedanken von Gott, etc.*, Halle, 1720, §§142–145, quoted by Cassirer, *Erkenntnisproblem, 2*, II, p. 523.

[2] *Prolegomena,* Open Court Edition, p. 45. As Cassirer says: "*Wirklich ist was mit einer Wahrnehmung nach empirischen Gesetzen zusammenhängt, und was durch dem "Kontext" der Einen Erfahrung eindeutig eingeordnet ist.*" *Op. cit.*, II, p. 670.

[3] Müller, p. 164.

[4] *The World as Will and Idea,* trans. by Haldane and Kemp, Vol. I, p. 22.

It follows from this that Kant cannot be held to have *proved* that there is a world of phenomena governed by law, that there is a realm of necessary connections. His argument only affirms that *if* there is an objective world, it is a world of necessary connections. Whoever denies that there is an objective world must necessarily remain unpersuaded by Kant's argument. But Kant's critical method, when purged of all irrelevancies, means taking one's stand on our common human experience and our common human science and asking what our meaning *really is* when we affirm an objective world.

II.

The first Analogy is stated in *A* as: "All phenomena contain the permanent (substance) as the object itself, and the changeable as its determination only, that is, as a mode in which the object exists"; while in *B* the statement is: "In all changes of phenomena the substance is permanent, and its *quantum* is neither increased nor diminished in nature." It is hardly to be decided which of these statements should be taken as expressing Kant's real meaning. The second formula definitely asserts that substance is permanent, and yet Kant himself in the course of his defense of this very Analogy declares that "*the proposition that substance is permanent is tautological.*"[1] If the permanence of substance is tautological, then the proposition that its '*quantum*' neither increases nor decreases is also tautological. One of Kant's oldest expositors, Mellin, suggests that Kant may have merely meant to make his doctrine more intelligible by connecting it with the older doctrine of the indestructibility of substance. According to Mellin the doctrine really belongs in the metaphysics of nature rather than in transcendental philosophy.[2] If we follow this suggestion, then we must take the first formula, which amounts to the assertion that all phenomena contain substance, as in accordance with the general drift of Kant's system. His meaning is, not that substance is permanent, which is self-evident, but that the category of substantiality must be applied to all phenomena if they are to be objective.

---

[1] Müller, p. 150.

[2] Mellin, G. S. A., *Encyclopädisches Wörterbuch der kritischen Philosophie. Züllichau und Leipzig,* 1797, Vol. I, p. 166.

And his 'proof' of this principle also shows that he was, in this connection, interested rather in the necessity of conceiving the world under the category of substance than in the permanence of substance. The argument, which Kant inserted in *B*, immediately following the statement of the principle, and which may be taken as typical, is as follows:

The simultaneousness and succession of phenomena can only be represented in time.

Time itself cannot be perceived, but the substratum which represents time in phenomena is substance.

Therefore, the permanent in reference to which all temporal relations of phenomena can be determined is substance, and, as the substratum of all change, cannot change. And thus it cannot be increased or diminished.

In both *A* and *B* we have the following, which may serve as a commentary on this argument: "Our apprehension of the manifold of phenomena is always successive, and therefore always changing. By it alone, therefore, we can never determine whether the manifold, as an object of experience, is coexistent or successive, unless there is something in it which exists always, that is, something constant and permanent, while change and succession are nothing but so many kinds (*modi*) of time in which the permanent exists."[1] Kant's argument, in a word, is this: the stream of subjective apprehension, of our mental states, is successive. But the objective world *changes*. If it changes, there must be something permanent in it, since change involves something underlying it as a substratum.

If we interpret this argument 'psychologistically,' it means that there is first a stage in which the whole content of the individual's consciousness is a pure succession of mental states devoid of objective reference. Kant indeed suggests, by his manner of formulating the question, that we first experience a pure subjective succession which we afterwards objectify on the basis of the principle of substantiality, a proposition which, as psychology, must be rejected as utterly mythological. But here again there is possible a purely logical interpretation, which would make Kant's argument run about as follows: Substantiality is a part of objectivity, hence we can never know objectivity, that is, the world of physical reality, without presupposing its substantiality.

---

[1] Müller, p. 149.

In this form his argument reduces to a pure analysis of what we mean by physical objectivity. And of course there is the further question as to whether, as such an analysis, Kant's proposition is true. Is substantiality really implied in our 'experience' of the world? This question is one which can only be answered by direct reference to common sense and science. It is certain that our 'transcendental philosophy' by itself cannot presume to decide even a question as general as that as to whether the mechanistic or the energistic account of physical phenomena is the true one.[1] It is of course clear that modern physics cannot tolerate 'substance' in the sense of Aristotelianism or Medieval Scholasticism. Substance as the mysterious inner striving of things, as their hidden kernel, has no place in the equations of mathematical physics, whether under the head of matter or of force. What seems to be permanent in modern science is rather the laws, the mathematical formulæ themselves, although of course they, too, have only a relative permanence in the history of human science. Thus the permanence of matter consists in that the same portion of it retains the same mass under all circumstances whatever chemical or physical transformation it undergoes. The same portion of it always produces the same phenomenal effect by which *mass* is measured. Thus the permanence of matter is really the permanence of certain mathematical constants. The same is true of the conservation of energy. It, too, means merely the constancy of certain ratios by which so much heat can be transformed into so much mechanical energy and then into so much light energy and so on. It thus means not the permanence of a thing-like substratum, but rather the constancy of certain 'transformation-ratios.' If this is true, then the substantial element in the world, which Kant demanded as a necessary correlative to change, would be certain ultimate mathematical constants, themselves not removed from the possibility of change, in so far as they are parts of human science.

---

[1] *Cf.* Cassirer, *Substanzbegriff und Funktionsbegriff,* p. 249 ff.

Kant's argument, when reduced to what it really proves, is extremely general in import. It tells us nothing about 'matter' and nothing about the 'soul.' It merely affirms that change and permanence are correlative wherever they are found. Corresponding to each change there must be something permanent. The series of successive states must be gathered into a unity and in this form set over against themselves as a plurality. When brought to this high generality, the principle of substance seems entirely unobjectionable.

III.

The Second Analogy was also restated by Kant in *B*. In *A* Kant says: "Everything that happens (begins to be), presupposes something on which it follows according to a rule"; while in *B* he says: "All changes take place according to the law of connection between cause and effect." Here again it is hard to say whether *B* is really an improvement over *A* or not. The first formula certainly has the advantage of telling us what is meant by 'cause and effect,' while the second has what is perhaps a slight advantage in telling us definitely that it is *changes* which fall under the law of cause and effect, although the phrase 'everything that happens' is very nearly tantamount to 'changes.'[1]

Smith and others have called attention to the fact that Kant's argument in this section is extraordinarily repetitious. Five times does Kant repeat in the first edition, and six times in the second edition what comes, for all practical purposes, to the same argument.[2] This argument is stated as clearly as anywhere in the

[1] *Cf.* Cohen, who regards this alteration as somehow important. *Kants Theorie der Erfahrung,* 3, p. 572.

[2] It is a feature of Smith's truly instructive commentary that it carefully discusses these arguments one by one. (*Cf. A Commentary to Kant's 'Critique of Pure Reason,'* London, 1918, p. 371 f.) Much praise must be given to the works of Vaihinger and Smith for the tone of scientific objectivity which pervades them in contrast to the more 'inspired' works of Cohen and Caird. But the latter, too, have their value.

paragraph which Kant inserted in *B* immediately following the statement of the Analogy. I perceive that phenomena succeed each other. This connection of 'objective succession' is not merely a work of the senses and pure intuition, but is a product of a synthetical power of the faculty of imagination, which determines the internal sense with reference to relation in time. But mere imagination can connect the two events *X* and *Y*, either *X-Y* or *Y-X*. Neither can we determine empirically with reference to time what follows and what precedes in the object. ". . . *es bleibt durch die blosse Wahrnehmungen das objective Verhältniss der einanderfolgender Erscheinungen unbestimmt.*"[1] Now, to conceive this objective relation we need the concept of the relation of cause and effect: "the cause not being something that might be antecedent in imagination only, or might not be perceived at all."[2] This argument of Kant is supported by two examples, drawn, fortunately or not as the case may be, not from the *mathematische Naturwissenschaft,* so much emphasized by Cohen,[3] but from everyday life. These two examples are: the house and the ship. I apprehend the house in a succession of perceptions, but I take its parts to be coexistent. In the case of the ship floating down the stream, I can objectify the series of perceptions because I know that, causally, the ship *must* be down stream *after* it has been up stream rather than *vice versa.* "If we supposed that nothing precedes an event upon which such event must follow according to rule, all succession of perception would then exist in apprehension only, that is, subjectively; but it would not thereby be determined objectively, what ought to be the antecedent and what the subsequent in perception."[4] "If we try to find out what new quality or dignity is imparted to our representations by their relation to an *object,* we find that it consists in nothing but the rendering necessary the connection of representations in a certain way, and subjecting them to a rule; and that on the other hand they receive their objective character only because a certain order is necessary in the time relations of our representations." [1]

---

[1] B. 233 f.

[2] Müller, p. 775.

[3] *Cf.* the remarkable and suggestive introduction to Cohen's *Kants Theorie der Erfahrung,* 3, Berlin, 1918.

[4] Müller, p. 159.

Kant's argument in this section is in appearance very radical and profound. "The second Analogy," says Smith, "though crabbedly, diffusely and even confusedly stated, is one of the finest and most far-reaching pieces of argument in the whole *Critique*." [2] While questioning its merits as an *argument*, we shall have no reason to doubt its strategic significance in Kant's war on empiricism. Its merit in this connection consists in that it enables Kant to turn the tables completely on Hume. With all his skepticism, Hume had on occasion appealed to an objective world, which he assumed to be somehow real, without being able to justify his belief by logic, and which somehow impressed its uniformity on the 'mind.' The 'mind,' according to its subjective associative mechanism, derives its belief in the uniformity of nature from the repetitions of *objective events*. Now, Kant's argument purports to show, and in a sense does show, that there would be for us no objective order of events were it not for the *a priori* principle of causality. If the principle of causality is indeed a condition of the possibility of there being, for us, an objective world, then empiricism is forever refuted.

Kant's argument is that we could not arrange events into a single objective temporal order, did we not assume the principle of causality. But it is remarkable that the counter-arguments of Schopenhauer[3] have proved their relevance and cogency by calling forth an answer from each of the commentators. And these replies of the commentators somehow do not seem quite to touch Schopenhauer's arguments. We shall see that Schopenhauer does prove the unacceptability of the psychologistic phases of Kant's teaching, the phase of Kant's teaching which seems to say that we 'arrange' events in objective time (in all cases) by the aid of the principle of causality. In the first place, Schopenhauer points out that the change is *objective* in both of Kant's examples, in the case of both the house and the ship. "In the first case, one of these bodies [that are in relative motion] is a part of the observer's own organism, the eye, and the other is the house, with respect to the different parts of which the eye successively alters its position."[1] "It would be just as possible in the second as in the first instance, to invert the order of succession in the change, were it as easy for the observer to move the ship up the stream as to alter the direction of his own eyes."[2] Thus in both of the cases adduced by Kant there is a genuine *objective* succession of events. But this is not the worst. The worst is that Kant's argument would make *all sequences causal sequences.* Kant's statement certainly implies that no sequence is objective unless it is a causal sequence. But the statement that all sequences are causal sequences is, as Caird says, "obviously absurd,"[3] and that such is the case is easily seen from Schopenhauer's examples. Tones in a piece of music succeed each other objectively without being causally related and the same is true of day and night.[4] As I am leaving my house, says Schopenhauer, a tile happens to fall from the roof and strikes me; there is no causal relation between my going out and the falling of the tile, yet their sequence is *objective* enough. "If Kant's assertion were correct," says Schopenhauer, "which I dispute, our only way of knowing the reality of succession would be through its necessity; but this would presuppose an understanding that embraced all the series of causes and effects at once, consequently an omniscient understanding."[5]

---

[1] Müller, p. 161.

[2] *Commentary*, p. 364. Riehl says that the manner of proof of the Analogies is most suited to make clear the manner of proving synthetic propositions *a priori*. *Der Philosophische Kritizismus*, 2, Leipzig, 1908, p. 543. Cassirer both in his *Erkenntnisproblem* (2, Vol. II, p. 720) and in *Kants Leben und Lehre*, 1918 (p. 194), lays great stress on Kant's manner of proving the Analogies. Suggestive as Cassirer's treatment is, I feel that perhaps Cassirer's account of the matter is really *truer* than Kant's.

[3] On Schopenhauer and Kant in general *cf.* Tsanoff, *Schopenhauer's Criticism of Kant's Theory of Experience*. Cornell Studies, No. 9.

Now, both Caird and Smith, in defending Kant against Schopenhauer at this point, fall back on the arguments of Stadler, which are in themselves very keen, but nevertheless cannot be reconciled with Kant's *prima facie* meaning, that, namely, we 'arrange' events in objective time only be virtue of the principle of causality.[1] Stadler says, in brief, that if we refer the tones or day and night to the 'substances' involved in them we shall see that they must be *"referred to a cause."* "We know that successions become necessary, *i.e.*, objective, for our consciousness, when we regard them as changes of a substance which are determined by a cause."[2] Even the immediate succession of the "falling tile" and "my going out" must be *presupposed* to have an unknown cause. "It is not," says Stadler, "the perception of U [the unknown cause], but the presupposition of it, which makes the change necessary and so objective for us." And in precisely the same sense, Caird says: "In other words, the recognition of a sequence of ideas as representing an objective change *is* the recognition of that sequence as a link in a chain of changes which is determined by a general rule of possible perception, and not merely a sequence of states in the experience of an individual."[3]

---

[1] *Fourfold Root, etc.,* Tr. Hillebrand, Bohn Lib., p. 101.

[2] *Op cit.,* p. 102.

[3] *Cf.* Caird, *op, cit.,* I, p. 528.

[4] Mellin in 1797 discusses the objection based on the succession of tones, but is only able to say that the tones *objectively* follow their cause, the player, but *subjectively* follow each other.

[5] *Fourfold Root, etc.,* p. 107.

Thus it is not the *perception* but the *presupposition* of a cause which makes a sequence objective. Stadler says 'objective, *i.e.*, necessary,' and the 'is' in Caird's italics emphasizes the same identity. The interpretation of Kant involved here is that the very idea of physical objectivity implies causal order; it is an essential part of physical objectivity, of being real in a physical sense, to conform to natural laws. But if we hold fast to this interpretation we must abandon what Kant himself seems to have regarded as his most telling argument, the notion that we can only 'arrange' things in objective time on the basis of causality. For now we see that to reach physical objectivity no *perception* of *the* cause is needed, but only the *assumption* or *presupposition* of *a* cause. Thus I can give *Y* its place in objective time, without even knowing what *X* is; the mere knowledge that it has a cause is sufficient to stamp it with objectivity.

One more argument remains. If I only knew that the sequence *X*-*Y* was objective, by knowing that *X* is the cause of *Y*, how could I ever learn the particular empirical law *X-Y*? According to Kant's whole teaching, particular laws are learned from experience. Kant himself says, in discussing this very Second Analogy, that "the succession in time is therefore the only empirical criterion of an effect with regard to the causality of the cause which precedes it."[1] If now I learn the causal relation of *X-Y* by observing their objective sequence, then it is preposterous to say that I learn their objective sequence only because I already know that they are related as cause and effect.

---

[1] *Cf.* August Stadler: *Die Grundsätze der reinen Erkenntnistheorie in der Kantischen Philosophie,* Leipzig, 1876. The quotation in Caird is from p. 152.

[2] Caird, p. 529.

[3] *Ibid.*, p. 528.

Thus Kant's particular argument falls aside and we see ourselves forced back to the more general argument as to the implications of the idea of physical objectivity. If we would know what causality means for common sense we must make some sort of analysis of common sense based on an analysis of common language; if we would know what causality means for science, then we must make an historical and carefully documented study of science. That in some sense causality, as the uniformity of nature rather than as the efficient causation of Aristotle, is involved in the scientific view of the world is beyond doubt; it is, indeed, one of the scientist's *criteria* of reality.[2] Kant was no doubt right in *assuming* that we know an objective world, and in trying to show how knowledge of causality is 'presupposed' in knowledge of an objective order, but in his actual argument he fell into an attempt to describe the process by which we 'build up' an outer world out of mere subjective states; and this description of a non-existent[3] process is also obviously absurd.

---

[1] Müller, p. 166.

[2] The truth of this statement is brought out in a work that must always be precious to philosophy: "The most persistent outer relations which science believes in are never matters of experience at all, but have to be disengaged from under experience by a process of elimination, that is, by ignoring conditions which are always present. The *elementary* laws of mechanics, physics, and chemistry are all of this sort. The principle of uniformity of nature is of this sort; it has to be *sought* under and in spite of the most rebellious appearances; and our conviction of its truth is far more like a religious faith than like assent to a demonstration." James, *Principles of Psychology,* Vol. II, p. 636.

[3] As Prichard says: ". . . from the beginning we are aware of real elements, viz., of events in nature, and we are aware of them as really related, viz., as successive in nature." *Op. cit.,* p. 294.

IV.

The Third Analogy is what Kant calls Reciprocity (in *A Grundsatz der Gemeinschaft,* in *B Grundsatz des Zugleichseins, nach dem Gesetz der Wechselwirkung, oder Gemeinschaft*). This principle is stated in *A* as, "All substances, in so far as they are coexistent, stand in complete community, that is, reciprocity one to another," and in *B* as, "All substances, so far as they can be perceived as coexistent in space, are always affecting each other reciprocally, *sind in durchgängiger Wechselwirkung.*" The second statement has the advantage of making clear that space is involved in reciprocity, and the change from 'are coexistent' to 'can be perceived as coexistent' is significant.

Kant's argument is as follows: When the perception of *X* can follow on the perception of *Y,* and that of *Y* on that of *X,* then the two, *X* and *Y,* are to be taken as coexistent. But the stream of subjective presentations is always successive. To escape this stream of successive subjective apprehensions, I must assume that objects are bound together by mutual causal relations, such that *X* influences *Y* and *Y* influences *X.* Only because I know this principle can I relate *X* and *Y* as coexistent. "We can easily perceive in our experience that continuous influences only can lead our senses in all parts of space from one object to another; that the light which plays between our eyes and celestial bodies produces a mediate communion between us and them, and proves the coexistence of the latter; that we cannot change any place empirically (perceive such a change) unless matter itself renders the perception of our own place possible to us, and that by means of its reciprocal influence only matter can evince its simultaneous existence, and thus (though mediately only) its coexistence, even to the most distant objects."[1]

---

[1] Müller, p. 174. This passage is really extremely vague. Schopenhauer remarks that the phrase "the light which plays between our eyes and celestial bodies (*zwischen unserm Auge und den Weltkörpern spielt*)" surreptitiously suggests that our eyes influence the starlight. This light, Kant says, "produces a mediate communion between us and them, and proves the coexistence of the latter." Schopenhauer replies: "Now, even empirically, this last assertion is false; since the sight of a fixed star by no means proves its coexistence simultaneously with its spectator, but, at most, its existence some years, nay,

In criticism of this argument we need only appeal to what seems to be an unavoidable fact of experience that we do actually judge many things to be coexistent without knowing that they are in causal interaction.[1] According to the Newtonian theory of gravitation, and, I presume, that of Einstein as well, all physical objects are, in a sense, in continual interaction, but obviously we need not know this to judge them to be coexistent. Whether or not all things *are* in reciprocal interaction is irrelevant; all that is involved is whether we must know that they are in interaction in order to judge them to be coexistent. Contrary to Kant's statement, I need not know that the earth and the moon are bound together by gravitation to know that they coexist at the same time. And how could I know that the earth and the moon do influence each other causally, if I did not experience them as coexistent? We must remember that all particular laws are admitted by Kant to be based on experience, and that all the Analogies, like all other 'transcendental' propositions, must be purely formal.

Indeed this principle in general seems to be a mere outgrowth of Kant's well-known love of architectonic symmetry. Just as the category of reciprocity has only the most shadowy connection with the disjunctive judgment, so the principle of reciprocity in general seems of rather elusive character. Schopenhauer's free and independent approach to Kant shows its superiority at this point. He frankly declares that "the real logical analogue of reciprocity is the vicious circle,"[2] and asserts that "the conception *reciprocity* cannot be supported by a single example."[3] His argument goes

---

even some centuries before." *Fourfold Root, etc.*, p. 109. There is, however, a striking similarity between this passage and those propositions in Einstein's theory of relativity which affirm that *simultaneity* can be established only where there is physical interaction, as in the case of the two mirrors at the ends of the rod. *Cf.* also Cassirer, *Zur Einstein'schen Relativitätstheorie*, Berlin, 1921, p. 80 f.

[1] Cassirer, *op. cit.*, p. 63.

[2] *World as Will and Idea*, English trans. by Haldane and Kemp. Vol. II. p. 61.

[3] Mahaffy says: "I determine the place of a table, a room, a house, a town, by its relation to other simultaneous objects—nay more, the very earth itself by its position in the Solar System." (*Kant's Critical Philosophy for English Readers*, London, 1889, Vol. I, p. 190.) This fact of the relativity of all position has nothing to do with the reciprocal causal influence that Kant's statements in both *A* and *B* clearly imply.

to show, however, not that there is no such thing as reciprocity, but rather that it can be resolved into causality. This is seen in the excellent example he selects from Humboldt's *Ansichten der Natur:* "In the sandy deserts it does not rain, but it rains upon the wooded mountains surrounding them. The cause is not the attraction of the clouds by the mountains; but it is the column of heated air rising from the sandy plain which prevents the particles of vapor from condensing, and drives the clouds high into the heavens. On the mountains the perpendicular rising stream of air is weaker, the clouds descend and rainfall ensues in the cooler air. Thus, want of rain and the absence of plants in the desert stand in the relation of reciprocity; it does not rain because the heated sand-plain sends out more heat; the desert does not become a steppe or prairie because it does not rain. But clearly we have here again, . . . only a succession of causes and effects of the same names, and throughout nothing essentially different from simple causality."[1] If we analyse other well-known cases of reciprocity such as the relation between poverty and ill-health or intemperance, between mental and bodily disease, between the individual and the social whole, we shall find that we are really dealing with a complication of causality. Thus Riehl, who is on the whole a strict Kantian, is obliged to admit that we cannot regard reciprocity as an equally primitive principle (*gleich ursprüngliches Prinzip*) with substance and causality, since, as he says, it obviously rests on a combined application of the two preceding principles.[2] Thus, with regard to the Third Analogy, we are obliged to insist that it is possible to know coexistences that are not cases of reciprocal influence and to confess that it is hard to see that the deeper argument from the idea of physical objectivity can be applied in this case, as undoubtedly it can be applied in the First and Second Analogies.

W. CURTIS SWABEY.

THE RICE INSTITUTE,
HOUSTON, TEXAS.

---

[1] *Op cit.*, p. 64.

[2] *Cf.* Riehl, *op cit.*, p. 559. With this we may compare the statement of Mill, whose *System of Logic,* with all its 'empiristic' defects, must always be admired as a magnificent piece of clear thinking, that "there is no general axiom standing in the same relation to the uniformities of co-existence as the law of causation does to those of succession." Bk. III, Ch. XXII, §4.